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(71) Applicant (for all designated States except US): AQUA
HEALTH (EUROPE) LIMITED [GB/GB]; Enterprise
House, Springkerse Business Park, Stirling FK7 7UF
(GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SIMARD, Nathalie
[CA/CA]; 921 College Hill Road, Fredericton, New
Brunswick E3B 6Z9 (CA). BROUWERS, Huub
[NL/CA]; University of Prince Edward Island, 550
University Avenue, Charlottetown, PEI C1A 4P3 (CA).
JONES, Simon [CA/CA]; Fisheries and Oceans, 555
West Hastings Street, Vancouver, British Columbia V6B
5G3 (CA). GRIFFITHS, Steve [GB/CA]; 921 College
Hill Road, Fredericton, New Brunswick E3B 6Z9 (CA).

VALENZUELA, Pablo [CL/CL]; Fundacion Ciencia
para la Vida, Avenida Marathon 1943, Santiago (CL).
BURZIO, Luis [CL/CL]; BIOS Chile, Avenida Marathon
1943, Santiago (CL).

(74) Agent: MURGITROYD & COMPANY; 373 Scotland
Street, Glasgow G5 8QA (GB).

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(54) Title: FISH VACCINE AGAINST PISCIRICKETTSIA SALMONIS

(57) Abstract: The present invention relates to a fish vaccine. More specifically the invention relates to a vaccine to protect salmon against infection by *Piscirickettsia salmonis*. The invention is based on or derived from the nucleic acid or amino acid sequence of at least a part of the surface antigen present on *Piscirickettsia salmonis*. Nucleic acid and/or amino acid sequences may be used in the preparation of a vaccine to protect against infection by *Piscirickettsia salmonis*.

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/GB 01/01055

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/31 C07K14/29 A61K39/02 A61K48/00 A61P31/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

MEDLINE, CHEM ABS Data, BIOSIS, SEQUENCE SEARCH, EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JONES S R ET AL: "Virulence and antigenic characteristics of a cultured Rickettsiales-like organism isolated from farmed Atlantic salmon <i>Salmo salar</i> in eastern Canada." DISEASES OF AQUATIC ORGANISMS, (1998 MAY 14) 33 (1) 25-31. , XP001029879 the whole document	3-8
A	BARNES M N ET AL: "Purification of <i>Piscirickettsia salmonis</i> and partial characterization of antigens." DISEASES OF AQUATIC ORGANISMS, (1998 MAY 14) 33 (1) 33-41. , XP001029898 the whole document	3-8

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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2260 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Mennessier, T

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 01/01055

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	MARSHALL S ET AL: "Minimally invasive detection of <i>Piscirickettsia salmonis</i> in cultivated salmonids via the PCR." APPLIED AND ENVIRONMENTAL MICROBIOLOGY, (1998 AUG) 64 (8) 3066-9. , XP001029515 the whole document	3-8
P,X	KUZYK M A ET AL: "OspA, a lipoprotein antigen of the obligate intracellular bacterial pathogen <i>Piscirickettsia salmonis</i> ." JOURNAL OF MOLECULAR MICROBIOLOGY AND BIOTECHNOLOGY, (2001 JAN) 3 (1) 83-93. , XP001029507 the whole document	3-8

FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

Continuation of Box I.2

Claims Nos.: 1-2 (each as a whole), 3-5 (each partly)

Due to the indefinite expressions "substantially homologous to at least a part of the surface antigen" used in claim 1 and "a part of the surface antigen" used in claim 2, no meaningful search could be carried out on the subject-matter of said claims.

Whereas the same defect also affects claims 3-5 as being dependent on said claims, a meaningful partial search could be carried out on said claims taking into consideration only the whole nucleic acid and amino acid sequences referred to in claims 3 and 5, i.e., those sequences having the sequence identifiers SEQ ID NO: 1-8 and 10-29, as defined in the listing sequence filed with the letter of 25.06.2001. The whole sequences were searched as well as the use of the whole nucleic acid sequences in the preparation of a vaccine.

With respect to claim 6-8, a complete search was carried out, the SEQ ID of the sequence listing filed with the letter of 25.06.2001 being taken into consideration (SEQ ID NO: 1, 3, 5, 7, 10, 12, 14, 16, 18, 20, 22, 24, 26 and 28 for the nucleic acid sequences; SEQ ID NO: 2, 4, 6, 8, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29 and 30 for the amino acid sequences).

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.